



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED  
FEB 06 2003  
TECH CENTER 1600/2900

In re the Application of )  
Peter Iwen et al. )  
Serial No. 09/580,797 )  
Filed: May 30, 2000 )  
For: MATERIALS AND METHODS FOR )  
MOLECULAR DETECTION OF CLINICALLY )  
RELEVANT, PATHOGENIC FUNGAL SPECIES)

) Group Art Unit: 1634  
)  
) Examiner: J. Goldberg  
)  
) Response to Paper No. 16  
)  
)  
)

RECEIVED

JAN 24 2003

TECH CENTER 1600/290

**DECLARATION OF PETER C. IWEN**

I, Peter C. Iwen, hereby declare that:

1. I am a citizen of the United States and reside at 6006 Lafayette Ave, Omaha, NE 68132.
2. I received a B.S. degree in Bacteriology from North Dakota State University, and a M.S. degree in Medical Microbiology and Ph.D. degree in Medical Sciences (Infectious Diseases): Internal Medicine, from the University of Nebraska Medical Center.
3. I have over 20 years of experience in the field of microbiology, my particular area of expertise being in infectious disease.
4. I am the author or co-author of over 30 scientific articles on the subjects of medical microbiology, immunology, and medicine. A list of these articles is set forth in my curriculum vitae, attached hereto. My current areas of research include fungal pathogen research.
5. I am a co-inventor of the subject matter disclosed and claimed in U.S. Patent Application Serial No. 09/580,797, entitled "MATERIALS AND METHODS FOR MOLECULAR DIAGNOSIS OF CLINICALLY RELEVANT, PATHOGENIC FUNGAL SPECIES." (hereinafter "the '797 application").

## **Statements Regarding Issues Related to Obviousness**

6. I have read and am familiar with the Official Action dated July 25, 2002, in the '797 application. I understand the nature of the rejections made by the Examiner concerning obviousness. I have also read the prior art references relied on in support of the rejection of the claims. Specifically, these claim rejections and the cited prior art are as follows:

### **Claims:**

2-4, 20

### **Cited Prior Art**

White et al. (PCR Protocols: A Guide to Methods and Applications, pages 315-322, 1990) and Beck, US Patent 5,827,695, in view of Borsuk et al. (Acta Biochimica Polonica, Vol. 41:73-77, 1994) and Nikkuni et al. (J. Gen. Appl. Microbiol. 44:225-230, 1998) and Pazoutova (GenBank Accession No. AJ001331 (August 1997) and Peterson (GenBank Accession No. U65306 (May 1997) and Aguirre et al. (GenBank Accession No. U93683 (May 1997) and further in view of Sandhu et al. US Patent 5,707,802.

5

White et al. and Beck in view of Borsuk et al. and Nikkuni et al. and Pazoutova and Peterson and Aguirre et al. and further in view of Nelson et al., US Patent 5,827,656.

21

White et al. and Beck et al. in view of Borsuk et al. and

Nikkuni et al. and  
Pazoutova and Peterson  
and Aguirre et al. and  
further in view of  
Sandhu et al. and Wang  
et al., US Patent  
5,876,977.

21

White et al. and Beck  
in view of Borsuk et  
al. and Nikkuni et al.  
and Pazoutova and  
Peterson and Aguirre  
et al. and further in  
view of Sandhu et al.  
and in further view of  
Felgner et al., US  
Patent 6,165,720.

7. As exemplified in the specification, my co-inventors and I have devised an improved method for diagnosing pathogenic fungal infection, and further, for differentiating infectious fungal species. The improved method comprises identification of species specific regions which are isolated using PCR amplification of conserved regions. Briefly, in order to provide improved methods for differential fungal pathogen diagnosis, a sample from a patient suspected of having a fungal infection is provided. Two oligonucleotide primers, SEQ ID NO:1 and SEQ ID NO:2 are added which bracket the hypervariable region on the ITS nucleic acid, if present, in the fungal nucleic acid containing sample. The sequence between the primers is amplified and a detectably labeled probe which is directed to a portion of the hypervariable region bracketed by the primers is used to identify the fungal species.

8. None of the references cited by the Examiner teach a primer set which comprises SEQ ID NO:2. The Examiner asserts that the primers of White et al. are functionally equivalent

to the instantly claimed primer set of SEQ ID NO:1 and 2, and thus concludes that the instantly claimed methods are obvious over White et al. It is respectfully submitted that the primers of White et al. are not functionally equivalent to the instantly claimed primer set of SEQ ID NO:1 and 2, as the following data will show.

9. Presented herein as Exhibit A are the results of PCR amplification comparing the primer set of White et al., and SEQ ID NOS: 1 and 2 of the instant application. The claims have been amended and recite a method and primer set which can amplify *A. flavus*, *A. fumigatus*, *A. nidulans*, and *A. terreus*. Exhibit A shows an agarose gel and ethidium bromide staining of PCR products. Lanes 1 and 5, *A. flavus*; Lanes 2 and 6, *A. fumigatus*; Lanes 3 and 7, *A. nidulans*; Lanes 4 and 8, *A. terreus*; and Lane MKR, 100 bp DNA ladder. Primer pairs tested include ITS1th (5'- GGAAGTAAAAGTCGTAACAAGG-3')/ ITS4th (5'- GTATCCCTACCTGATCCGAGG-3'), designated as SEQ ID #1 and SEQ ID #2, respectively and ITS1 (5'-TCCGTAGGTGAACCTGCG-3')/ ITS4 (5'-TCCTCCGCTTATTGATATGC-3'), White et al.

10. From this Experiment, it is clear that the primer set of White et al. is not the functional equivalent of the instantly claimed primer set. In the gel shown in Exhibit A, *A. terreus* was amplified by the primer set of the instant invention, but was not amplified by the primer set of White et al. Also, *A. flavus*, *A. nidulans* were strongly amplified by the primer set of the instant invention, but only weakly amplified by the primer set of White et al. The strength of the signal generated by the amplicon could be a significant factor in accurately diagnosing a particular type of fungal infection. Consequently, the primer set of White et al. would be incapable of diagnosing *A. terreus* infection, and further would most likely not provide accurate diagnosis for *A. flavus* and *A. nidulans*.

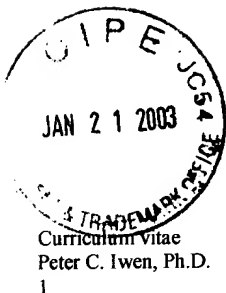
11. Thus, in light of the experimental evidence provided herewith, it is clear that Applicants primer set and methods are surprisingly superior than those described by White et al. Accordingly, it cannot be reasonably maintained that the

instantly claimed subject matter is rendered obvious by the prior art relied on by the Examiner.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful statements may jeopardize the validity of the above-referenced application or any patent issued thereon.

12/18/02  
DATE

Peter C. Iwen  
Peter C. Iwen, Ph.D.



**RECEIVED**  
**FEB 06 2003**  
**TECH CENTER 1600/2900**

## **CURRICULUM VITAE**

September 2002

**NAME IN FULL:** Peter C. Iwen, M.S., Ph.D., M(ASCP), SM(NRM), CLS/M

**SOCIAL SECURITY NO:** 502-60-5133

**ADDRESS:** University of Nebraska Medical Center  
Department of Pathology and Microbiology  
686495 Nebraska Medical Center  
Omaha, NE 68198-6495  
(402) 559-7774, FAX (402) 559-4077  
E-mail: piwen@unmc.edu

**PLACE OF BIRTH:** Fargo, North Dakota

**EDUCATION:**

1997-01	Ph.D., Medical Sciences (Infectious Diseases): Internal Med., University of Nebraska Medical Center, Omaha, NE Thesis, "Characterization of the internal transcribed spacer regions of the rDNA gene complex of human fungal pathogens", September 2001; Advisor, M.E. Rupp, M.D.
1979-82	M.S., Medical Microbiology, University of Nebraska Medical Center; Omaha, NE Thesis, "Treatment of experimental pulmonary cryptococcosis in the immunosuppressed mice with ketoconazole and amphotericin B". December 1982; Advisor, N.G. Miller, Ph.D.
1972-76	B.S., Bacteriology, North Dakota State University; Fargo, ND

## **POST-DEGREE AND CONTINUING EDUCATION TRAINING**

02/1998 to 01/2001	Fulfilled re-certification requirements with the National Certification Agency for Medical Laboratory Personnel as a Clinical Laboratory Scientist in Microbiology. CLS/M Current through January 2004
07/1993 to 06/1998	Fulfilled re-certification requirements with the National Registry of Microbiologists as a Specialist Microbiologist in Public Health and Medical Laboratory Microbiology. SM(NRM) Current through December 2003.

RECEIVED

JAN 24 2003

TECH CENTER 1600/2900

TECH CENTER 1600/2900

FEB 06 2003

RECEIVED

## ACADEMIC APPOINTMENTS:

1996-present	Assistant Professor, University of Nebraska Medical Center, Department of Pathology and Microbiology, Omaha, NE
1986-2000	Instructor, Iowa Western Community College, Nursing Department, Council Bluffs, IA
1993-96	Instructor, University of Nebraska Medical Center, Department of Pathology and Microbiology, Omaha, NE
1988-93	Courtesy Instructor, University of Nebraska Medical Center, Department of Pathology and Microbiology, Omaha, NE

## CERTIFICATIONS AND LICENSES:

1992-present	Clinical Laboratory Scientist in Microbiology. The National Certification Agency for Medical Laboratory Personnel. CLS/M
1988-present	Specialist Microbiologist in Public Health and Medical Laboratory Microbiology. The National Registry of Microbiologists, American Academy of Microbiology. SM(NRM)
1984-present	Microbiologist. American Society of Clinical Pathologists. M(ASCP)

## GRANT/CONTRACT SUPPORT:

10/02 to 09/03	"Development of a microchip for the identification of fungal pathogens" Transgenomic, Inc. Principal Investigator, <b>Peter C. Iwen</b> (\$50,000)
09/02 to 08/03	"Molecular characterization and pathogenesis of <i>Francisella tularensis</i> " Provisional PIs, Mike Meagher/ (\$100,000) Steve Hinrichs Co-Investigator <b>Peter C. Iwen</b>
07/02 to 09/03	"Bioterrorism laboratory service agreement" Principal Investigator Steve Hinrichs (\$900,000) Co-Investigator <b>Peter C. Iwen</b>
01/02 to 10/02	"Practice guideline for treatment of suspected and proven candidiasis with fluconazole in non-neutropenic patients" Pfizer Pharmaceutical Principal Investigator, Phil Smith (\$6,500) Co-Investigator <b>Peter C. Iwen</b>

- 09/01 to 12/02      "A phase II, randomized, parallel, placebo-controlled, double-blind, multicenter efficacy and safety study of ramoplanin and placebo in neutropenic oncology patients identified as asymptomatic carriers of vancomycin-resistant *Enterococcus* (VRE)  
IntraBiotics Pharmaceuticals, Inc.  
Principal Investigator,      Julie Vose      (\$14,500)  
Co-Investigator      **Peter C. Iwen**
- 09/01 to 08/02      "Evaluation of the WAVE System to identify fungal pathogens"  
Transgenomic, Inc.  
Principal Investigator,      Steven H. Hinrichs      (\$50,000)  
Co-Investigator      **Peter C. Iwen**
- 09/01 to 03/02      "Dade MicroScan clinical study: dried overnight cation-adjusted antimicrobials for gram-negative organisms, Summer 2001"  
Dade Bering, MicroScan Division  
Principal Investigator,      **Peter C. Iwen**      (\$14,700)
- 08/01 to 12/02      "Comparison of hand bioburden in response of various hand hygiene practices"  
UNMC Clinical Research Center  
Principal Investigator,      Mark Rupp      (\$4,000)  
Co-Investigator      **Peter C. Iwen**
- 04/01 to 04/03      "Chemotherapy alliance for neutropenics and the control of emerging resistance (CANCER) surveillance program"  
The Jones Group  
Principal Investigator,      **Peter C. Iwen**      (\$18,000)
- 11/00 to 12/02      "Phase III, randomized, evaluation committee-blinded study to assess the safety and efficacy of topical administration of MBI 226 1.0% gel versus standard medical care in patients undergoing non-cuffed, short-term arterial and/or central venous catheterization"  
Omnicare Clinical Research  
Principal Investigator,      Austin Thompson      (\$300,000)  
Co-Investigator      **Peter C. Iwen**
- 07/00 to 06/01      "Faculty education support grant"  
UNMC College of Medicine  
Principal Investigator,      **Peter C. Iwen**      (\$1,600)
- 06/00 to 06/01      "Application of a new polymerase chain reaction technique for rapid detection and identification of fungal pathogens"



	Merck & Co., Inc. Principal Investigator,	<b>Peter C. Iwen</b>	(\$66,540)
06/00 to 06/01	"Dade MicroScan clinical trial Conventional Antibiotic Qualification 8" Dade Behring, MicroScan Division Principal Investigator,	<b>Peter C. Iwen</b>	(\$32,500)
11/99 to 03/01	"Influenzae surveillance program" R.W. Johnson Pharmaceutical Research Institute Principal Investigator,	<b>Peter C. Iwen</b>	(\$5,000)
09/99 to 12/00	"Enhanced laboratory preparedness" Nebraska Department of Health and Human Services Principal Investigator, Contract Support,	James Wisecarver <b>Peter C. Iwen</b>	(\$140,825)
09/99 to 11/99	"Historic control study of the efficacy of standard therapy in acute aspergillosis to allow comparison with the efficacy of voriconazole" Pfizer Corporation Principal Investigator, Contract Support,	Elizabeth Reed <b>Peter C. Iwen</b>	(\$3,700)
09/99 to 02/00	"Outcomes experience of patients with invasive aspergillosis treated with amphotericin B, lipid formulations of amphotericin B, and/or itraconazole" Merck & Co., Inc Principal Investigator, Co-Investigator,	Edward Dominguez <b>Peter C. Iwen</b>	(\$24,000)
08/99 to 03/00	"North American Zyvox (linazolid) antimicrobial potency study" The Clinical Pharmacokinetics Laboratory Principal Investigator,	<b>Peter C. Iwen</b>	(\$2,250)
07/99 to 11/99	"Moxifloxacin regional and national in vitro susceptibility of common respiratory tract pathogens" Bayer Corporation Principal Investigator,	<b>Peter C. Iwen</b>	(\$5,000)
02/99 to 12/99	"Improving the diagnosis of invasive aspergillosis in immuno-compromised patients" The Liposomal Company Principal Investigator,	<b>Peter C. Iwen</b>	(\$5,000)

10/98 to 06/99	“The impact of <i>Lactobacillus casei</i> GG on the GI function in short bowel syndrome” ConAgra, Inc. Principal Investigator, Judith D. Sondheimer (\$2,000) Co-Investigator, <b>Peter C. Iwen</b>		
07/98 to 07/00	A comparison of the Arrowg+ and III antimicrobial surface treated, triple-lumen, central venous catheters vs. standard-triple lumen catheters in a randomized, double-blinded multi center trial” Arrow International, Inc. Principal Investigator, Mark E. Rupp (\$150,000) Contract Support <b>Peter C. Iwen</b>		
07/98 to 06/99	“Faculty education support grant” UNMC College of Medicine Principal Investigator, <b>Peter C. Iwen</b> (\$1,000)		
07/98 to 12/98	“Enterohemorrhagic <i>E.coli</i> prevalence study” State of Nebraska Principal Investigator, Paul D. Fey (\$7,000) Co-Investigator, <b>Peter C. Iwen</b>		
02/98 to 12/98	“Universal swab equivalency study” GenProbe, Inc. Principal Investigator, <b>Peter C. Iwen</b> (\$24,800) Co-Investigator, Steven H. Hinrichs		
07/97 to 06/98	“Enteric decontamination with bacitracin and bismuth subsalicylate in patients colonized with VRE” UNMC Seed Research Grant Principal Investigator, Mark E. Rupp (\$7,500) Co-Investigator, <b>Peter C. Iwen</b>		
02/97 to 02/98	“Dried overnight gram-positive identification clinical trial” Dade MicroScan International Principal Investigator, <b>Peter C. Iwen</b> (\$5,000)		
07/96 to 06/97	“Study of contamination in non-vented closed enteral feeding systems” Clintec Technologies, Inc. Principal Investigator, Mark E. Rupp (\$15,000) Contract Support <b>Peter C. Iwen</b>		

07/96 to 12/96	"National broad spectrum-lactamase surveillance trial." University of Iowa Hospitals and Clinic. Principal Investigator, Ron Jones Co-Investigator, <b>Peter C. Iwen</b> (\$1,500)		
07/93 to 06/94	"Evaluation of the PACE 2C to detect <i>C. trachomatis</i> and <i>N. gonorrhoeae</i> " Gen-Probe, Inc. Principal Investigator, Gail Woods (\$34,000) Co-Investigator, <b>Peter C. Iwen</b>		

#### PATENTS:

U.S. Application No. 09/580,797 (pending)

#### COLLECTIONS:

##### American Type Culture Collection

8/98	<i>Aspergillus ustus</i>	ATCC 201953
1/99	<i>Gymnascella hyalinospora</i>	ATCC 204275
1/99	<i>Cylindrocarpon lichenicola</i>	ATCC 204306
2/00	<i>Candida glabrata</i>	ATCC MYA-296
7/01	<i>Exiguobacterium aurantiacum</i>	ATCC BAA-333

##### NCBI GenBank Sequences

2/99	<i>Gymnascella hyalinospora</i>	(VAMH 7366)	ITS1-5.8S-ITS2	AF129853
2/99	<i>Gymnascella hyalinospora</i>	(ATCC 204275)	"	AF129854
2/99	<i>Cladophialophora bantiana</i>	(UTHSC94-986)	"	AF131079
3/99	<i>Cylindrocarpon lichenicola</i>	(ATCC204306)	ITS1-5.8S-ITS2	AF133843
5/99	<i>Aspergillus fumigatus</i>	(ATCC 36607)	"	AF138288
5/99	<i>Aspergillus terreus</i>	(ATCC 16792)	"	AF138290
5/99	<i>Aspergillus flavus</i>	(ATCC 16883)	"	AF138287
5/99	<i>Emmerciella nidulans</i>	(ATCC 10074)	"	AF138289
5/99	<i>Aspergillus niger</i>	(ATCC 16888)	"	AF138904
5/99	<i>Aspergillus ustus</i>	(ATCC 201953)	"	AF157507
6/99	<i>Cryptococcus neoformans</i>	(ATCC 32045)	"	AF162916
6/99	<i>Ajellomyces capsulatus</i>	(ATCC 12700)	"	AF156892
6/99	<i>Histoplasma duboisii</i>	(ATCC 24294)	"	AF162917
7/99	<i>Fusarium oxysporum</i>	(ATCC 48112)	"	AF165875
7/99	<i>Fusarium moniliforme</i>	(ATCC 48843)	"	AF165873
7/99	<i>Nectria haematococca</i>	(ATCC 62877)	"	AF165874
7/99	<i>Candida glabrata</i>	(ATCC 15545)	"	AF167993
7/99	<i>Cylindrocarpon destructans</i>	(UAMH 4907)	"	AF172261
7/99	<i>Candida lusitanae</i>	(ATCC 66035)	"	AF172262

8/99	<i>Pseudallescheria boydii</i>	(patient)	“	AF181558
9/99	<i>Blastoschizomyces capitatus</i>	(patient)	“	AF183911
9/99	<i>Ajellomyces dermatitidis</i>	(patient)	“	AF183912
1/00	<i>Candida albicans</i>	(ATCC 28516)	“	AF217609
1/00	<i>Lactobacillus rhamnosus</i>	(ATCC 53103)	16S-ITS-23S	AF217610
3/00	<i>Malassezia furfur</i>	(ATCC 44344)	ITS1-5.8S-ITS2	AF246896
3/00	<i>Issatchenkia orientalis</i>	(ATCC 6258)	“	AF246989
7/00	<i>Candida tropicalis</i>	(ATCC 750)	“	AF287910
7/00	<i>Candida parapsilosis</i>	(ATCC 22019)	“	AF287909
8/00	<i>Yersinia enterocolitica</i>	(ATCC 27729)	16S-ITS-23S	AF293850
8/00	<i>Bacillus cereus</i>	(clinical isolate)	“	AF293851
9/00	<i>Bacillus anthracis</i>	(Pasteur strain)	“	AY008265
5/01	<i>Sporothrix schenckii</i>	(ATCC 14284)	ITS1-5.8S-ITS2	AF364061
9/01	<i>Exiguobacterium auranticum</i>	(ATCC BAA-333)	16S rDNA	AY047481
12/01	<i>Rhizomucor pusillus</i>	(patient)	ITS1-5.8S-ITS2	AF461764
12/01	<i>Pichia jadinii</i>	(patient)	“	AF458091

## OTHER APPOINTMENTS/POSITIONS:

### Nonacademic appointments

2001-present	Biosafety Officer Univer. NE Med. Ctr./ Univer. NE at Omaha/ NE Health Systems
1997-present	Associate Director, Nebraska Public Health Laboratory
1997-present	Special Microbiology Projects Coordinator, Nebraska Health System's Clinical Microbiology Laboratory
1994-97	Clinical Projects Coordinator, University Hospital's Clinical Microbiology Laboratory
1986-93	Supervisor, Pathology and Microbiology University of Nebraska Medical Center
1983-86	Technical Supervisor, Medical Microbiology University of Nebraska Medical Center
1980-83	Laboratory Technologist, Medical Microbiology University of Nebraska Medical Center
1978-80	Laboratory Technician, Medical Microbiology University of Nebraska Medical Center

### Part-time positions

1982-96	Technologist, Clinical Microbiology Laboratory, University Hospital, Omaha
1980-82	Laboratory Technologist, Animal Vaccine Laboratories, Council Bluffs, IA

## CONSULTING POSITIONS:

### Academic

- |              |   |
|--------------|---|
| 1992-present | Midwest Student Medical Research Forum,<br>Abstract Judge, American Medical Association |
| 1991-present | Student Research Forum,<br>Abstract Judge, UNMC Center for Continuing Education         |

### Government

- |         |  |
|---------|--|
| 1981-97 | Consultant<br>University Hospital's Clinical Microbiology Laboratory |
|---------|--|

### Industry

- |              |   |
|--------------|---|
| 2001-present | Transgenomic, Inc., Omaha, NE                 |
| 1983-86      | Porci-Tec Labs, Inc., Avoca, IA               |
| 1982-86      | Modern Veterinary Products, Inc., Ralston, NE |

### Editorial duties

- |              |   |
|--------------|---|
| 2000-present | Invited reviewer, <i>Medical Mycology</i>                               |
| 1997-present | Invited reviewer, <i>Diagnostic Microbiology and Infectious Disease</i> |
| 1994-present | Invited reviewer, <i>Clinical Infectious Diseases</i>                   |
| 1994-present | Invited reviewer, <i>Infection Control and Hospital Epidemiology</i>    |

## MILITARY SERVICE:

None. No obligation

## HONORS AND AWARDS:

- |      |   |
|------|---|
| 1998 | Travel Award to ASM General Meeting,<br>Dade MicroScan, Inc., West Sacramento, CA.                      |
| 1997 | Scherago-Rubin Award,<br>American Society for Microbiology, Washington, D.C.                            |
| 1995 | Travel Award to ASM General Meeting,<br>Dade MicroScan Inc., West Sacramento, CA.                       |
| 1994 | Travel Award to ASM General Meeting,<br>Gen Probe Inc, San Diego, CA.                                   |
| 1991 | Certificate of Merit for Excellence in Teaching,<br>American Medical Student Association                |
| 1990 | Travel Award to ASM Annual Meeting,<br>DIFCO Laboratories, Ann Arbor, Mich.                             |
| 1987 | Nominee for Outstanding Service to Allied Health Profession,<br>First year Physician Assistant Students |

## MEMBERSHIPS AND OFFICES IN PROFESSIONAL SOCIETIES:

2002-present	Full member,	American Biological Safety Association
2001-present	Delegate member,	Association of Public Health Laboratories
1985-present	Full member,	American Society for Microbiology
1985-present	Associate member,	American Society for Clinical Pathologists

## COMMITTEE ASSIGNMENTS:

2001 to present	Member,	UNMC Safety Committee University of Nebraska Medical Center, Omaha
2001 to present	Member,	Institutional Biosafety Committee University of Nebraska Medical Center, Omaha
2001 to present	Member,	Bioterrorism Steering Committee Nebraska Health Systems, Omaha
2001 to present	Member,	Policy and Planning Committee Association of Public Health Laboratories, Washington, D.C.
1998 to present	Member,	Infection Control Committee Nebraska Health Systems, Omaha
1986 to 1998	Member,	Infection Control Committee University Hospital, Omaha

## BIBLIOGRAPHY:

### Articles published in scholarly journals

**Iwen, P.C.**, N.G. Miller, and H.W. McFadden, Jr. 1984. Treatment of murine pulmonary cryptococcosis with ketoconazole and amphotericin B. *J. Infect. Dis.*, 149:650.

**Iwen, P.C.** and N.G. Miller. 1986. Enhancement of ketoconazole across the blood-brain barrier of mice by dimethyl-sulfoxide. *Antimicrob. Agents Chemother.*, 30:617-618.

**Iwen, P.C.**, S.J. Booth, and G.L. Woods. 1989. Comparison of media for screening of diarrhetic stools for the recovery of *Clostridium difficile*. *J. Clin. Microbiol.*, 27:2105-2106.

Records, R.E. and **P.C. Iwen**. 1989. Experimental bacterial endophthalmitis following extracapsular lens extraction. *Experiment. Eye Res.*, 49:729-737.

Woods, G.L. and **P.C. Iwen**. 1990. Comparison of a dot immunobinding assay, latex agglutination, and cytotoxin assay for laboratory diagnosis of *Clostridium difficile*-associated diarrhea. *J. Clin. Microbiol.*, 28:855-857.

Tritz, D.M., **P.C. Iwen** and G.L. Woods. 1990. Evaluation of MicroScan<sup>TM</sup> for identification of *Enterococcus* species. J. Clin. Microbiol., 28:1477-1478.

**Iwen, P.C.**, T.M.H. Blair, and G.L. Woods. 1991. Comparison of the Gen-Probe PACE 2 System, direct fluorescent-antibody and cell culture for detecting *Chlamydia trachomatis* in cervical specimens. Amer. J. Clin. Path., 95:578-582.

Sahm, D.F., S. Boonlayangoor, **P.C. Iwen**, J.L. Baade, and G.L. Woods. 1991. Factors influencing determination of high-level amino glycoside resistance in *Enterococcus faecalis*. J. Clin. Microbiol., 29:1934-1939.

**Iwen, P.C.**, E.C. Reed, J.O. Armitage, P.J. Bierman, A. Kessinger, J.M. Vose, M.A. Arneson, B.A. Winfield, and G.L. Woods. 1993. Nosocomial invasive aspergillosis in lymphoma patients treated with bone marrow or peripheral stem cell transplants. Infect. Control Hosp. Epidemiol., 14:131-139.

**Iwen, P.C.** 1993. Nosocomial aspergillosis in lymphoma patients (reply). Infect. Control Hosp. Epidemiol., 14:509.

**Iwen, P.C.**, J.C. Davis, E.C. Reed, B.A. Winfield, and S.H. Hinrichs. 1994. Airborne fungal spore monitoring in a protective environment during hospital construction and correlation with an outbreak of invasive aspergillosis. Infect. Control Hosp. Epidemiol., 15:303-306.

**Iwen, P.C.**, D.M. Kelly, E.C. Reed, and S.H. Hinrichs. 1995. Invasive infection due to *Candida krusei* in immunocompromised patients not treated with fluconazole. Clin. Infect. Dis. 20:342-347.

**Iwen, P.C.**, R.A. Walker, K.L. Warren, D.M. Kelly, S.H. Hinrichs, and J. Linder. 1995. Evaluation of a nucleic acid-based test for simultaneously detecting *Chlamydia trachomatis* and *Neisseria gonorrhoeae* in endocervical specimen. J. Clin. Microbiol., 33:2587-2591.

**Iwen, P.C.**, D.M. Kelly, J. Linder, and S.H. Hinrichs. 1996. Revised approach for identification and detection of ampicillin and vancomycin resistance in *Enterococcus* species by using MicroScan panels. J. Clin. Microbiol., 34:1779-1783.

**Iwen, P.C.**, R.A. Walker, K.L. Warren, D.M. Kelly, J. Linder, and S.H. Hinrichs. 1996. Effect of off-site transportation on detection of *Neisseria gonorrhoeae* in endocervical specimens. Arch. Pathol. Lab. Med., 120:1019-1022.

**Iwen, P.C.**, E.A. Dominguez, D.M. Kelly, J. Linder, K.D. Patil, M.E. Rupp, and S.H. Hinrichs. 1997. Change in prevalence and antibiotic resistance in *Enterococcus* species isolated from blood cultures over an eight year period. Antimicro. Agents Chemother., 41:494-495.

**Iwen, P.C.**, M.E. Rupp, and S.H. Hinrichs. 1997. Invasive mold sinusitis: seventeen cases in immunocompromised patients and review of the literature. *Clin. Infect. Dis.*, 24: 1178-1184.

Tarantolo, S.R., J.D. Landmark, **P.C. Iwen**, A. Kessinger, W.C. Chan, and S.H. Hinrichs. 1997. *Bartonella*-l erythrocyte inclusions in thrombotic thrombocytopenia purpura. *Lancet*, 350 (9091):1602.

Smith, T.L., **P.C. Iwen**, S.B. Olson, and M.E. Rupp. 1998. Environmental contamination with vancomycin-resistant enterococci in an outpatient setting. *Infect. Control Hosp. Epidemiol.*, 19:515-518.

**Iwen, P.C.**, M.E. Rupp, A.N. Langanas, E.C. Reed, and S.H. Hinrichs. 1998. Invasive pulmonary aspergillosis due to *Aspergillus terreus*: 12-year experience and review of the literature. *Clin. Infect. Dis.* 26:1092-7.

**Iwen, P.C.**, M.E. Rupp, M.R. Bishop, M.G. Rinaldi, D.A. Sutton, S. Tarantolo, and S.H. Hinrichs. 1998. Disseminated aspergillosis caused by *Aspergillus ustus* in a patient following allogeneic peripheral stem cell transplantation. *J. Clin. Microbiol.*, 36:3713-3717.

Ratanasuwan, W., **P.C. Iwen**, S.H. Hinrichs, and M.E. Rupp. 1999. Bacteremia due to motile *Enterococcus* species: clinical features and outcomes. *Clin. Infect. Dis.* 28: 1175-1177.

Rupp, M.E., R.A. Weseman, N. Marion, and **P.C. Iwen**. 1999. Evaluation of bacterial contamination of a sterile, non air-dependent, enteral feeding system in immunosuppressed patients. *Nutri. Clin. Pract.* 14: 135-137.

**Iwen, P.C.**, M.E. Rupp, P.C. Schreckenberger, and S.H. Hinrichs. 1999. Evaluation of the revised MicroScan dried overnight gram-positive identification panel to identify *Enterococcus* species. *J. Clin. Microbiol.* 37:3756-3758.

**Iwen, P.C.**, S.R. Tarantolo, L. Sigler, D.A. Sutton, M.G. Rinaldi, R.P. Lackner, D.I. McCarthy, and S.H. Hinrichs. 2000. Pulmonary infection caused by *Gymnascella hyalinospora* in a patient with acute myelogenous leukemia. *J. Clin. Microbiol.* 38:375-381.

Henry, T., **P.C. Iwen**, and S.H. Hinrichs. 2000. Identification of *Aspergillus* species using internal transcribed spacer regions 1 and 2. *J. Clin. Microbiol.* 38:1510-1515.

Fey, P.D., T.J. Safranek, M.E. Rupp, E.F. Dunne, E. Ribot, **P.C. Iwen**, P.A. Bradford, F. J. Angulo, and S.H. Hinrichs. 2000. Pediatric ceftriaxone-resistant *Salmonella* infection acquired from infected cattle in the United States. *N. Engl. J. Med.* 342:1242-1249.

**Iwen, P.C.**, S.R. Tarantolo, D.A. Sutton, M.G. Rinaldi, and S.H. Hinrichs. 2000. Cutaneous infection caused by *Cylindrocarpum lichenicola* in a patient with acute myelogenous leukemia. *J. Clin. Microbiol.* 38:3375-3378.



Rupp, M.D., N. Marion, P.D. Fey, D.L. Bolam, **P.C. Iwen**, C.M. Overfelt, and L. Chapman. 2001. Outbreak of vancomycin-resistant *Enterococcus faecium* in a neonatal intensive care unit. Infect. Control Hosp. Epidemiol. 22: 301-303.

Veverka, F., N. Shapiro, M.K. Parish, W. Becker, F. Smith, C. Allensworth, T. Baker, **P. Iwen**, and T. Safraneck. 2001. Protracted outbreaks of cryptosporidiosis associated with swimming pool use, Ohio and Nebraska, 2000. MMWR; 50: 406-410.

**Iwen, P.C.**, S.H. Hinrichs, and M.E. Rupp. 2002. Utilization of the internal transcribed spacer regions as molecular targets to detect and identify human fungal pathogens (review). Med. Mycol. 40: 87-109.

Veligandla, S.R., S.H. Hinrichs, M.E. Rupp, E.A. Lien, J.R. Neff, and **P.C. Iwen**. 2002. Delayed diagnosis osseous blastomycosis in two patients following environmental exposure in nonendemic areas. Amer. J. Clin. Pathol. (in press).

#### Letters

**Iwen, P.C.** 1993. "About birds, courthouse" (Legal case of histoplasmosis),  
Omaha World Herald Public Pulse, August 19.

**Iwen, P.C.** 1994. "Science is for all",  
Omaha World Herald Public Pulse, January 16.

**Iwen, P.C.** 1995. "Fund microbial research",  
Omaha World Herald Public Pulse, December 7.

**Iwen, P.C.** 1996. "Questions questioned" (National Science Foundation survey),  
Omaha World Herald Public Pulse, June 2.

**Iwen, P.C.** 1997. "Solution to 'bad' meat" (Concerning *E.coli* 0157:H7 contaminated beef),  
Omaha World Herald Public Pulse, Oct 27.

**Iwen, P.C.** 1998. "Microbes resist drugs",  
Omaha World Herald Public Pulse, March 1.

**Iwen, P.C.** 1998. "Evolution's evidence?" (Concerning resistance in bacteria),  
Omaha World Herald Public Pulse, December 17.

**Iwen, P.C.** 1999. "More on chlamydia",  
Omaha World Herald Public Pulse, July 2.

**Iwen, P. C.** and S.H. Hinrichs. 2000. "Expanding endemic area for *Histoplasma capsulatum*", ASM News, 66:558.

**Iwen, P.C.** 2002. "Correct terminology for anthrax", ASM News, 68:1.

### Abstracts

Miller, N.G., **P.C. Iwen**, D.M. Smith, and H.W. McFadden, Jr. 1981. Therapy of pulmonary cryptococcosis with ketoconazole in immunosuppressed mice. 21st Interscience Conference on Antimicrobial Agents and Chemotherapy. Chicago, IL, p. 226.

**Iwen, P.C.**, N.G. Miller, and H.W. McFadden, Jr. 1983. A comparison of ketoconazole and amphotericin B in the treatment of pulmonary cryptococcosis in immunosuppressed mice. 23rd Interscience Conference on Antimicrobial Agents and Chemotherapy. Las Vegas, NV, p. 262.

**Iwen, P.C.** and N.G. Miller. 1986. Enhancement of ketoconazole across the blood-brain barrier of mice by dimethyl-sulfoxide. 86th Annual Meeting of the American Society for Microbiology. Washington, D.C. p. 405.

**Iwen, P.C.**, S.J. Booth, and G.L. Woods. 1989. Screening of diarrhetic stools for the recovery of *Clostridium difficile*: a media comparison. 89th Annual Meeting of the American Society for Microbiology, New Orleans, LA, p. 448.

Tritz, D.M., **P.C. Iwen**, and G.L. Woods. 1989. Comparative evaluation of the MicroScan and conventional media for the identification of enterococci. 89th Annual Meeting of the American Society for Microbiology. New Orleans, LA, p. 436.

**Iwen, P.C.**, J.M. Saunders, and G.L. Woods. 1990. Comparison of MicroScan<sup>TM</sup> and agar dilution for detection of high-level amino glycoside resistance among enterococci. 90th Annual Meeting of the American Society for Microbiology, Anaheim, CA, p. 369.

**Iwen, P.C.**, T.M.H. Blair, and G.L. Woods. 1990. Evaluation of Gen-Probe PACE 2 for detection of *Chlamydia trachomatis* in endocervical specimens. 30th Interscience Conference on Antimicrobial Agents and Chemotherapy, Atlanta, GA.

Sahm, D.F., S. Boonlayangoor, **P.C. Iwen**, J. Baade, and G. Woods. 1990. Factors influencing the determination of high-level amino glycoside resistance in *Enterococcus faecalis*. 30th Interscience Conference on Antimicrobial Agents and Chemotherapy, Atlanta, GA.

**Iwen, P.C.**, M.A. Arneson, E.C. Reed, B.A. Winfield, and G.L. Woods. 1991. Nosocomial aspergillosis in lymphoma patients treated with bone marrow or peripheral stem cell transplants. 91st General Meeting of the American Society for Microbiology, Dallas, TX

**Iwen, P.C.**, J.C. Davis, and B.A. Winfield. 1992. An assessment of air quality monitoring following failure of a protective environment to prevent invasive aspergillosis (IA) in neutropenic patients during major construction. 92nd General Meeting of the American Society for Microbiology, New Orleans, LA, Abstract No. F-21.

**Iwen, P.C.**, S.H. Hinrichs, D.M. Kelly, and E.C. Reed. 1993. *Candida krusei* causing invasive candidiasis in compromised patients not treated with fluconazole. 93rd General Meeting of the American Society for Microbiology, Atlanta, GA, Abstract No. F-51.

Klaebisch, S., **P.C. Iwen**, B. Winfield, N. Jones-Ladd, and J.C. Davis. 1993. Comparison of gravity air settling plates to the Andersen single stage viable impactor for detecting molds in a protected environment. Twentieth Annual Conference and International Meeting of the Association for Practitioners in Infection Control, Orlando, FL.

Catral, M., J. Lowell, A. Langnas, **P.C. Iwen**, J. Linder, J. Bynon, R. Stratta, and B. Shaw, Jr. 1993. Invasive aspergillosis and other mold infections in liver transplant recipients. 44<sup>th</sup> Annual Meeting of the American Association for the Study of Liver Disease, Chicago, IL, Abstract No. 741.

Cantral, D.E., **P.C. Iwen**, E.C. Reed, M.A. Kessinger, S.I. Rennard, A.A. Floreani, A.B. Thompson, T. Walters, and J.R. Spurzem. 1994. Diagnosis of invasive pulmonary aspergillosis by bronchoalveolar lavage in patients undergoing bone marrow transplantation. American Thoracic Society Meeting, Boston, MA.

**Iwen, P.C.**, R.A. Walker, K.L. Warren, D.M. Kelly, S.H. Hinrichs, and J. Linder. 1994. Evaluation of a nucleic acid based test for simultaneously detecting *Chlamydia trachomatis* and *Neisseria gonorrhoeae* in endocervical specimens. 94th General Meeting of the American Society for Microbiology, Las Vegas, NV, Abstract No. C-517.

Dominguez, E.A., J.C. Davis, M.E. Rupp, R.V. Goering, B. Winfield, **P.C. Iwen**, and A.N. Langnas. 1994. Vancomycin-resistant *Enterococcus faecium* infections in liver-transplant patients. 32nd Annual Meeting of the Infectious Disease Society of America, Orlando, FL, Abstract No. 115.

Rader, A.E., M.B. Kenny-Moynihan, J. Linder, and **P.C. Iwen**. 1994. Utility of surgical biopsy and frozen section in the diagnosis of invasive mould infections of the sinuses in the immunocompromised patient. ASCP/CAP 1994 Fall National Meeting, Washington, D.C., Abstract No. 142.

**Iwen, P.C.**, A.E. Rader, D. Kelly, J.C. Davis, M.E. Rupp, E.A. Dominguez, and J. Linder. 1994. Selective media for surveillance of vancomycin-resistant *Enterococcus*. ASCP/CAP 1994 Fall National Meeting, Washington, D.C., Abstract No. 149.

**Iwen, P.C.**, R.A. Walker, K.L. Warren, D.M. Kelly, S.H. Hinrichs, and J. Linder. 1994. Comparison of nucleic-acid probe testing with off-site testing for detection of *Chlamydia trachomatis* and *Neisseria*

*gonorrhoeae* from endocervical specimens. ASCP/CAP 1994 Fall National Meeting, Washington, D.C., Abstract No. 151.

**Iwen, P.C.**, E.A. Dominguez, D.M. Kelly, M.E. Rupp, and J. Linder. 1995. Increase in antimicrobial resistance among blood isolates of enterococci accompanied by a shift in distribution of species. 95<sup>th</sup> General Meeting of the American Society for Microbiology, Washington, D.C., Abstract No. L-12.

**Iwen, P.C.**, D.M. Kelly, J. Mockler, and J. Linder. 1995. Performance of MicroScan<sup>R</sup> conventional dried panels for identification and detection of ampicillin and vancomycin resistance in *Enterococcus* species. 95<sup>th</sup> General Meeting of the American Society for Microbiology, Washington, D.C., Abstract No. C-365.

West, L.Y., S.M. Beiraghi, **P.C. Iwen**, and C.G. Kuster. 1996. *Streptococcus mutans* levels in children before and after restorations. International Association of Dental Research Annual Meeting, San Francisco, CA, Abstract.

**Iwen, P.C.**, D.M. Kelly, and S.H. Hinrichs. 1996. Ten-year review of *Aspergillus terreus* infection in immunocompromised patients. 96th General Meeting of the American Society for Microbiology, New Orleans, LA, Abstract No. F-23.

Iverson, P.L., **P.C. Iwen**, D.L. Wells, P. Matthews, D.D. Weller, and R. E. Brand. 1997. Evaluation of ion trapping engines for delivery of novel therapeutics into *Helicobacter felis*. IBC, Fourth Annual International Conference on *Helicobacter felis* and Gastrointestinal Disorders, Washington, D.C., Abstract.

**Iwen, P.C.**, M.E. Rupp, and S.H. Hinrichs. 1997. Community-acquired invasive aspergillosis in immunocompromised patients. 97th General Meeting of the American Society for Microbiology, Miami, FL, Abstract No. F-59.

Iverson, P.L., **P.C. Iwen**, D.L. Weller, P. Matthews, D.D. Weller, and R.E. Brand. 1997. Ion trapping engines for delivery of novel therapies for treatment of *Helicobacter pylori*. Annual Meeting of the American Gastroenterological Association and American Association for the Study of Liver Disease, Washington, D.C., Abstract.

Iverson, P.L., **P.C. Iwen**, D.L. Weller, P. Matthews, D.D. Weller, and R.E. Brand. 1997. Ion trapping engines for delivery of chloramphenicol for treatment of *Helicobacter pylori*. Annual Meeting of the American Gastroenterological Association and American Association for the Study of Liver Disease, Washington, D.C., Abstract.

Smith, T.L., **P.C. Iwen**, S. Olson, M. Lewis, and M.E. Rupp. 1997. Environmental contamination with vancomycin-resistant enterococci (VRE) in an outpatient setting. Seventh Annual Meeting of the Society for Health care Epidemiology of America, St. Louis, MO, Abstract.

Ratanasuwan, W., **P.C. Iwen**, S. H. Hinrichs, and M.E. Rupp. 1998. Bacteremia due to motile *Enterococcus* species: clinical features and outcomes. 98th General Meeting of the American Society for Microbiology, Atlanta, GA., Abstract No. A-95.

**Iwen, P.C.**, M.E. Rupp, P.Schreckenberger, and S.H. Hinrichs. 1998. Evaluation of the revised MicroScan dried overnight gram-positive identification panel to identify *Enterococcus* species. 98th General Meeting of the American Society for Microbiology, Atlanta, GA., Abstract No. C-154

Rupp, M.E., R.A. Weseman, N.Marion, and **P.C. Iwen**. 1998. Evaluation of a sterile, non-air-dependent enteral feeding system. Eighth Annual Meeting of the Society for Health care Epidemiology of America, Orlando, FL.,

Rupp, M.E., N. Marion, P.D. Fey, **P.C. Iwen**, D.L. Bolam, C.M. Overfelt, and L.Chapman. 1998. Successful control of an outbreak due to vancomycin-resistant enterococci in a neonatal intensive care unit. Eighth Annual Meeting of the Society for Health care Epidemiology of America, Orlando, FL.

Tarantolo, S.R., J.D. Landmark, **P.C. Iwen**, T.L. McDonald, E.C. Reed, M.R. Bishop, W.C. Chan, A.Kessinger, and S.H. Hinrichs. 1998. Evidence for an infectious cause of thrombotic thrombocytopenia purpura. The International Conference on Emerging Infectious Diseases, CDC, Atlanta, GA.

Fey, P.D. E.S. Moland, **P.C. Iwen**, S.H. Hinrichs, and M.E. Rupp. 1998. Outbreak of *Klebsiella pneumoniae* producing an extended-spectrum beta-lactamase in pediatric liver transplant patients. Interscience Conference on Antimicrobial Agents and Chemotherapy,

Weseman, R.A., N. Marion, **P.C. Iwen**, and M.E. Rupp. 1998. Absence of contamination in a non-air-dependent feeding system used with immunosuppressed patients. The American Dietetic Association 81st Annual Meeting and Exhibition, Kansas City, KS.

Vanderhoof, J.A., S.H. Hinrichs, **P.C. Iwen**, D.D. Bilyeu, and R.J. Young. 1999. Colonization of an infant with the probiotic, *Lactobacillus* GG, by maternal transmission. The American Pediatric Society/The Society for Pediatric Research.

Henry, T., **P.C. Iwen**, and S.H. Hinrichs. Identification of *Aspergillus* species by internal transcribed spacer PCR. 1999. 99th General Meeting of the American Society for Microbiology, Chicago, IL., Abstract No. F-55.

**Iwen, P.C.**, S.R. Tarantolo, L. Sigler, D.A. Sutton, M.G. Rinaldi, R.P. Lackner, D.I. McCarthy, and S.H. Hinrichs. 1999. Pulmonary infection caused by *Gymnascella hyalinospora* in a patient with acute myelogenous leukemia. 99th General Meeting of the American Society for Microbiology, Chicago, IL., Abstract No. F-6.

**Iwen, P.C.**, T.J. Henry, S.R. Tarantolo, and S.H. Hinrichs. 1999. ITS sequence identification of novel mould pathogens. Focus on Fungal Infections 9, San Diego, CA.

Shearon, E.C., S.H. Hinrichs, D.A. Sutton, M.G. Rinaldi, D.L. McCarthy, D.L. Sudan, and **P.C. Iwen**. 2000. Correlation of susceptibility testing with clinical response in patients without hematologic malignancies who develop candidemia caused by *Candida lusitanae*. 100<sup>th</sup> General Meeting of the American Society for Microbiology, Los Angeles, CA., Abstract No. F-5.

Meaker-Medcalf, S.M., L. Chapman, R.M. Craig, P.D. Fey, **P.C. Iwen**, N. Marion, and C.M. Overfelt. 2000. Successful control of an outbreak due to *Serratia marcescens* in a neonatal intensive care unit. 27<sup>th</sup> Annual Conference and International Meeting of the Association for Practitioners in Infection Control, Minneapolis, MN.

Rupp, M.E., A.M. Wallace, N. Marion, A.M. Paxton, R.M. Craig, J.D. Armitage, E.C. Reed, J.R. Anderson, and **P.C. Iwen**. 2000. Correlation between low-level environmental *Aspergillus* exposure and invasive aspergillosis in a HEPA-filtered bone marrow transplant unit, 1992-99. 27<sup>th</sup> Annual Conference and International Meeting of the Association for Practitioners in Infection Control, Minneapolis, MN.

**Iwen, P.C.**, T. Henry, A.R. Lodes, and S.H. Hinrichs. 2000. Culture identification of *Histoplasma capsulatum* using the rDNA internal transcribed spacer regions 1 and 2 as a molecular target. 100<sup>th</sup> General Meeting of the American Society for Microbiology, Los Angeles, CA., Abstract No. F-57.

**Iwen, P.C.**, S.H. Hinrichs, J.A. Gulizia, and Mark E. Rupp. 2001. Utilization of the internal transcribed spacer gene complex for diagnosis of invasive aspergillosis from formalin-fixed postmortem tissue. 2001 Diagnostic Approaches for Infectious Diseases: Future Promises and Impact on Clinical Management, Infectious Diseases Society of America, Orlando, FL. Abstract ID: 200652.

**Iwen, P.C.**, R. Rennie, D. Ballou, J. Johnston, S. Connell, and B. Zimmer. 2001. Multicenter evaluation of moxifloxacin and gatifloxacin comparing a MicroScan dried overnight panel with an NCCLS reference panel. 101<sup>st</sup> General Meeting of the American Society for Microbiology, Orlando, FL, Abstract No. C-297.

Ballou, D., R. Rennie, **P. Iwen**, J. Johnston, S. Connell, and B. Zimmer. 2001. Comparison of a MicroScan dried overnight panel to an NCCLS reference panel for antimicrobial susceptibility testing of linezolid in a multicenter study. 101<sup>st</sup> General Meeting of the American Society for Microbiology, Orlando, FL, Abstract No. C-100.

Fey, P.D., S.L. Greenwood, A.R. Sambol, **P.C. Iwen**, M.E. Rupp, T.J. Safranek, and S.H. Hinrichs. 2001. Prevalence of expanded spectrum cephalosporin-resistance within human *Salmonella* isolates from Nebraska. 101<sup>st</sup> General Meeting of the American Society for Microbiology, Orlando, FL, Abstract No. C-518.

Knudston, K.E., E.J. Haas, **P.C. Iwen**, W. C. Ramaley, and R.F. Ramaley. 2001. Characterization of a gram-positive, non spore-forming *Exiguobacterium*-like organism isolated from a Western Colorado

(USA) hot spring. 101<sup>st</sup> General Meeting of the American Society for Microbiology, Orlando, FL., Abstract No. I-92.

Hall, G., D. Kohn, **P. Iwen**, I. Mellion, P. Schreckenberger, J. Tjho, J. Johnson, S. Connell, J. O'Connor, B. Zimmer, and S. Cullen. 2002. Multicenter evaluation of cation-adjusted Mueller-Hinton broth for antimicrobial susceptibility testing of amino glycosides on MicroScan dried overnight gram-negative panels. 102<sup>nd</sup> General Meeting of the American Society for Microbiology, Salt Lake City, UT, Abstract No. C-125.

**Iwen, P.C.**, A.G. Freifeld, T.A. Bruening, and S.H. Hinrichs. 2002. Evaluation of the ESP blood culture system with a panfungal PCR assay for the detection of fungal pathogens in human blood. 102<sup>nd</sup> General Meeting of the American Society for Microbiology, Salt Lake City, UT Abstract No. F-64.

Moore, K.L., **P.C. Iwen**, E.J. Haase, I.C. Mellion, and R.F. Ramaley. 2002. Previously unrecognized pigmented thermophilic bacteria isolated from natural hot springs in Western Colorado and Yellowstone National Park. 102<sup>nd</sup> General Meeting of the American Society for Microbiology, Salt Lake City, UT, Abstract No. N-148.

Rupp, M., D. Jourdan, R. Craig, J. Keuchal, A. Paxton, N. Marion, E. Reed, and **P. Iwen**. 2002. Can fresh flowers and live plants be safely introduced into a bone marrow transplant unit? 12<sup>th</sup> Annual Meeting of the Society for Healthcare Epidemiology of America., Abstract

Sambol, T., **P.C. Iwen**, and S.H. Hinrichs. 2002. Implementation of the National Laboratory System at the state level and the Nebraska Laboratory Demonstration Project; status to date. Association of Public Health Laboratories Annual Meeting, Albuquerque, NM, Abstract.

Sambol, T., **P.C. Iwen**, and S.H. Hinrichs. 2002. Building the National Laboratory System: creating a laboratory reserve force. Association of Public Health Laboratories Annual Meeting, Albuquerque, NM, Abstract.

### **Presentations**

**Iwen, P.C.**, N.G. Miller, and R.E. McCarthy. Treatment of experimental pulmonary cryptococcosis in immunosuppressed mice with ketoconazole and amphotericin B alone and in combination. Annual Meeting of the Missouri Valley Branch of the American Society for Microbiology. Lawrence, KS. October 23, 1982.

**Iwen, P.C.**, N.G. Miller, and H.W. McFadden, Jr. A comparison of ketoconazole and amphotericin B in the treatment of pulmonary cryptococcosis in immunosuppressed mice. 23rd Interscience Conference on Antimicrobial Agents and Chemotherapy. Las Vegas, NV. October 26, 1983.

**Iwen, P.C.** and N.G. Miller. Enhancement of ketoconazole across the blood-brain barrier of mice by dimethyl-sulfoxide. 86th Annual Meeting of the American Society for Microbiology. Washington, D.C. March 24, 1986.

**Iwen, P.C.,** S.J. Booth, and G.L. Woods. Screening of diarrhetic stools for the recovery of *Clostridium difficile*: A media comparison. 89th Annual Meeting of the American Society for Microbiology. New Orleans, LA. May 17, 1989.

**Iwen, P.C.** Nosocomial aspergillosis of neutropenic patients occupying a protective environment. Annual Meeting of the Nebraska Society for Medical Technology and Midwest Section of American Association for Clinical Chemistry, Omaha, NE. May 3, 1990.

**Iwen, P.C.** D.M. Kelly, and G.L. Woods. Comparison of MicroScan<sup>TM</sup> and agar dilution for detection of high-level amino glycoside resistance among enterococci. 90th Annual Meeting of the American Society for Microbiology, Anaheim, CA. May 15, 1990.

**Iwen, P.C.,** J.M. Saunders, and G.L. Woods. Clinical evaluation of a dot immunobinding assay for laboratory diagnosis of *Clostridium difficile*-associated disease. 90th Annual Meeting of the American Society for Microbiology, Anaheim, CA. May 16, 1990.

**Iwen, P.C.** Risks and precautions of HIV infections and the health-care worker. Annual Meeting of the Iowa Organization for the Advancement of Associate Degree Nursing, Des Moines, IA. October 17, 1990.

**Iwen, P.C.,** M.A. Arneson, E.C. Reed, and B.A. Winfield. Nosocomial aspergillosis in neutropenic patients occupying a protective environment. Annual Meeting of the Missouri Valley Branch of the American Society for Microbiology. Omaha, NE. March 15, 1991.

**Iwen, P.C.,** M.A. Arneson, E.C. Reed, B.A. Winfield, and G.L. Woods. Nosocomial aspergillosis in lymphoma patients treated with bone marrow or peripheral stem cell transplants. 91st General Meeting of the American Society for Microbiology, Dallas, TX. May 9, 1991.

**Iwen, P.C.** The AIDS epidemic. Past experience, present status, and future prospects. Meeting of the Insurance Women of Omaha. Omaha, NE, February 17, 1992.

**Iwen, P.C.,** J.C. Davis, and B.A. Winfield. An assessment of air quality monitoring following failure of a protective environment to prevent invasive aspergillosis (IA) in neutropenic patients during major construction. 92nd General Meeting of the American Society for Microbiology, New Orleans, LA. May 27, 1992.

**Iwen, P.C.,** S.H. Hinrichs, D.M. Kelly, and E.C. Reed. *Candida krusei* causing invasive candidiasis in compromised patients not treated with fluconazole. 93rd General Meeting of the American Society for Microbiology, Atlanta, GA. May 19, 1993.

**Iwen, P.C.,** R.A. Walker, K.L. Warren, D.M. Kelly, S.H. Hinrichs, and J. Linder. Evaluation of a nucleic acid based test for simultaneously detecting *Chlamydia trachomatis* and *Neisseria gonorrhoeae*



in endocervical specimens. 94th General Meeting of the American Society for Microbiology, Las Vegas, NV. May 27, 1994.

**Iwen, P.C.,** A.E. Rader, D. Kelly, J.C. Davis, M.E. Rupp, E.A. Dominguez, and J. Linder. Selective media for surveillance of vancomycin-resistant *Enterococcus*. ASCP/CAP 1994 Fall National Meeting, Washington, D.C. October 24-26, 1994.

**Iwen, P.C.,** R.A. Walker, K.L. Warren, D.M. Kelly, S.H. Hinrichs, and J. Linder. Comparison of nucleic-acid probe testing with off-site testing for detection of *Chlamydia trachomatis* and *Neisseria gonorrhoeae* from endocervical specimens. ASCP/CAP 1994 Fall National Meeting, Washington, D.C. October 24-26, 1994.

**Iwen, P.C.,** D.M. Kelly, J. Mockler, and J. Linder. Performance of MicroScan<sup>R</sup> conventional dried panels for identification and detection of ampicillin and vancomycin resistance in *Enterococcus* species. 95th General Meeting of the American Society for Microbiology, Washington, D.C. May 23, 1995.

**Iwen, P.C.,** E.A. Dominguez, D.M. Kelly, M.E. Rupp, and J. Linder. Increase in antimicrobial resistance among blood isolates of enterococci accompanied by a shift in distribution of species. 95th General Meeting of the American Society for Microbiology, Washington, D.C. May 24, 1995.

**Iwen, P.C.** Etiological agents of nosocomial infections in the intensive care unit. Annual Workshop of the Adult Intensive Care Unit Nurses. Omaha, NE. January 15, 1996.

**Iwen, P.C.** and S.H. Hinrichs. Community-acquired invasive aspergillosis in patients requiring admission to the hospital. Annual Meeting of the Missouri Valley Branch of the American Society for Microbiology. Omaha, NE. March 8, 1996.

**Iwen, P.C.,** D.M. Kelly, and S.H. Hinrichs. Ten-year review of *Aspergillus terreus* infection in immunocompromised patients. 96th General Meeting of the American Society for Microbiology, New Orleans, LA, May 20, 1996.

**Iwen, P.C.,** M.E. Rupp, and S.H. Hinrichs. Community-acquired invasive aspergillosis in immunocompromised patients. 97th General Meeting of the American Society for Microbiology, Miami, FL, May 1997.

**Iwen, P.C.,** M.E. Rupp, P. Schreckenberger, and S.H. Hinrichs. Evaluation of the revised MicroScan dried overnight gram-positive identification panel to identify *Enterococcus* species. 98th General Meeting of the American Society for Microbiology, Atlanta, GA, May 19, 1998.

**Iwen, P.C.** Super bugs. Professional Growth Day for the Greater Omaha Area Association for Professionals in Infection Control and Epidemiology. Omaha, NE. June 5, 1998.

**Iwen, P.C.** Overview of microbiology topics for Infection Control personnel. Small Hospital Infection Control Workshop sponsored by the Nebraska Infection Control Network. Omaha, NE, September 26, 1998.

**Iwen, P.C.** Improving the diagnosis of invasive aspergillosis. UNMC Molecular Diagnostic Study Group. Omaha, NE, January 20, 1999.

**Iwen, P.C.,** T.J. Henry, S.R. Tarantolo, and S.H. Hinrichs. ITS sequence identification of novel mould pathogens. Focus on Fungal Infections 9, San Diego, CA., March 1999.

**Iwen, P.C.,** S.R. Tarantolo, L. Sigler, D.A. Sutton, M.G. Rinaldi, R.P. Lackner, D.I. McCarthy, and S.H. Hinrichs. Pulmonary infection caused by *Gymnascella hyalinospora* in a patient with acute myelogenous leukemia. 99th General Meeting of the American Society for Microbiology, Chicago, IL., May, 1999.

**Iwen, P.C.,** S.H. Hinrichs, J.A. Gulizia, and Mark E. Rupp. 2001. Utilization of the internal transcribed spacer gene complex for diagnosis of invasive aspergillosis from formalin-fixed postmortem tissue. 2001 Diagnostic Approaches for Infectious Diseases: Future Promises and Impact on Clinical Management, Infectious Diseases Society of America, Orlando, FL., April 29, 2001.

**Iwen, P.C.,** R. Rennie, D. Ballou, J. Johnston, S. Connell, and B. Zimmer. 2001. Multicenter evaluation of moxifloxacin and gatifloxacin comparing a MicroScan dried overnight panel with an NCCLS reference panel. 101<sup>st</sup> General Meeting of the American Society for Microbiology, Orlando, FL, May 21, 2001.

**Iwen, P.C.** 2002. The role of molecular mycology in clinical medicine. Focus on Fungal Infections 12, Phoenix, AZ, March 21, 2002.

**Iwen, P.C.,** A.G. Freifeld, T.A. Bruening, and S.H. Hinrichs. 2002. Evaluation of the ESP blood culture system with a panfungal PCR assay for the detection of fungal pathogens in human blood. 102<sup>nd</sup> General Meeting of the American Society for Microbiology, Salt Lake City, UT May 21, 2002.

### **Submissions**

Shearon, E.C., S.H. Hinrichs, D.A. Sutton, M.G. Rinaldi, D.L. McCarthy, D. Sudan, and **P.C. Iwen.** 2002. Correlation of susceptibility testing with clinical response in patients without hematologic malignancies who develop candidemia caused by *Candida lusitanae*. Clin. Infect. Dis. (Manuscript)

Stickle, D.F., D.A. McKenzie, J.A. Landmark, S.J. Pirruccello, G.A. Post, **P.C. Iwen,** and S.H. Hinrichs. 2002. Effect of sterilizing gamma irradiation on bloodspot newborn screening tests and on whole blood cyclosporine and FK-506 measurements. Amer. J. Clin. Pathol. (Manuscript)

Iwen, P.C. 2002. Molecular detection and typing of fungal pathogens. Clinics in Laboratory Medicine. (Book chapter)

**TEACHING ACTIVITIES:** 2001-2002  
Contact hours (ch) per calendar year

**Lectures in team-taught courses**

Introductory mycology	Medical	M-ID 630	1.5 ch
Mycology board review	Medical	M-ID 630	1.5
Parasitology board review	Medical	M-ID 630	1.5
Streptococci	PA/Pharm D	MM 550	2
Chlamydia	PA/Pharm D	MM 550	1
Introductory mycology	PA/Pharm D	MM 550	1
Antifungal agents	PA/Pharm D	MM 550	1
Cutaneous mycoses	PA/Pharm D	MM 550	1
True systemic mycoses	PA/Pharm D	MM 550	1
Opportunistic mycoses	PA/Pharm D	MM 550	1

**Laboratory coordinator and instructor in team-taught courses**

Immunological reagents	Medical	M-ID 630	2 ch
POPS: Tetanus	Medical	M-ID 630	2
POPS: Hypersensitivity	Medical	M-ID 630	2
Microbiological techniques	Medical	M-ID 630	4
Introductory mycology	Medical	M-ID 630	3
Diagnostic virology	Medical	M-ID 630	2
Diagnostic parasitology	Medical	M-ID 630	3
Blood cultures	Medical	M-ID 630	4
Urinary tract infections	Medical	GU core	4
Sexually transmitted diseases	Medical	GU core	2
Diseases of the lower GI	Medical	GI core	2

**Problem-based learning/small group facilitator**

PBL-case 1	Medical	M-ID 630	4 ch
PBL-case 2	Medical	M-ID 630	5
PBL-case 3	Medical	M-ID 630	5
PBL-case 4	Medical	M-ID 630	5
PBL-case 5	Medical	M-ID 630	5
PBL-case 1	Medical	Hematology	5
PBL-case 2	Medical	Hematology	5

**Course coordinator**

Medical Microbiology Laboratory	PA	MM 511	60 ch
---------------------------------	----	--------	-------

**Graduate students and resident training**

Infectious Diseases residency training and mentor on research projects

Curriculum vitae  
Peter C. Iwen, Ph.D.  
23

Pathology residency training and mentor on research projects

**Local, regional, and national educational activities**

Contributor to the "Nebraska Public Health Newsletter"

Participant in local Infectious Disease Weekly Conference

Regional consultant for environmental biological monitoring

Participant in local Infectious Disease Journal Club

Contributor and consultant to numerous articles in "UNMC Today"

Presentations to civic clubs and other organizations

Numerous television, newspaper, and radio interviews on microbiology and infectious diseases topics